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Resource Recovery Policy Branch
40 St. Clair Avenue West, 8th floor
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Re: ERO #019-4867 Environmental assessment requirements for advanced recycling facilities under the Environmental Assessment Act (EAA)

Thank you for the opportunity to comment on the proposed changes to environmental assessments under the *Environmental Assessment Act* (EAA) for projects that claim to engage in “advanced recycling.”

Zero Waste Canada is a non-profit grassroots organization, dedicated to ending our age of wastefulness through improved industrial design and education.

According to international definition of Zero Waste,

“Zero Waste is the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.”

Our current resource consumption systems of linear take-make-waste not only create waste but also generate a huge amount of greenhouse gases which constitute some of the discharges that threaten the environment and human health. EPR programs can play a key role in changing these consumption systems. For more information on Zero Waste, please see the Zero Waste Hierarchy.¹

¹ Zero Waste Hierarchy: <https://zerowastecanada.ca/zero-waste-hierarchy/>



Before commenting on your proposed changes to the environmental assessments we would first like to bring forward and address the following questions in your request for comments.

- ***Do the proposed definitions for advanced recycling site and recovered materials accurately capture advanced recycling technologies?***

Our response is NO, Zero Waste Canada whole heartedly rejects the use of the term advanced recycling as this term has been created to create confusion with the common term of RECYCLING. The term “advanced recycling” is primarily used when the end product is a product to be burned which is not how the general or scientific population understands the term recycling, which is to convert a product back into the same material to be reintroduced into the materials economy and not so it can be destroyed through burning.

A range of technologies have been associated with term “advanced recycling,” including pyrolysis, gasification, solvolysis, thermal and/or chemical depolymerization, plasma arc gasification and, as in the recent proposal in Newfoundland cited above, hydrothermal liquefaction. These processes generally employ some combination of heat, pressure, controlled oxygen and catalysts and/or solvents, to break down plastic waste and produce chemicals, fuels and waste by-products (including slag, tar and/or ash) fit for disposal. Non of these activities have any resemblance to recycling and labelling them as a higher form of recycling is highly confusing and problematic for the recycling industry.

Any project that turns waste into fuel is not recycling and should not use the term “recycling” in their definition.

We respectfully request that the Ministry stop using the term advance recycling for these processes and replace it with the more accurate term of **“Chemical Processing of Plastics to Fuel” and Chemical Processing of Plastic to Plastics”** These two terms would more accurately represent the process and ensure that the community at large understand the intent of the process.

Note: if a facility wishes to claim they are performing “Chemical Processing of Plastics to Plastics” they must be able to prove that over 90% of materials are in fact converted back to plastics and reintroduced into the materials economy.



In respect to the proposed changes, we agree with all points put forward by **Environmental Defense** and oppose the proposal to reduce environmental assessment requirements for any thermal treatment or waste management facilities. We also oppose any move to reclassify projects that purport to turn waste to fuel as anything other than disposal.

In addition, we request that cement kilns that are currently burning waste be include under the same regulations as Waste Incinerators to ensure that the safe guards in place to protect our communities from the release of toxic emissions immitted from the process of burning waste is applied to all facilities burning waste which includes cement kilns.

“Advanced recycling” does not merit regulatory streamlining

The backgrounder accompanying the Notice indicates that the purpose of “advanced recycling” is to “recover and recycle materials back into our economy.” This approach to “advanced recycling” is much broader than the definition of recovery set out in the *Resource Recovery and Circular Economy Act* (RRCEA) and accompanying regulations for packaging, which state that “recovered resources must be (i) marketed for re-use for their original purpose or function, or (ii) marketed for use in new products or packaging. The purpose of “advanced recycling” does not correspond to a circular economy approach.

“Advanced recycling” is promoted by the plastics and petrochemical industries as a solution for “hard-to-recycle” plastics. It is not contemplated or needed for other materials that are covered under the RRCEA, including metals, paper, glass or organics. These materials can be recycled through mechanical recycling processes and turned back into similar or the same products.

“Advanced recycling” is an umbrella term, sometimes also called “chemical” or “molecular recycling” that encompasses an ever-growing list of technologies that are speculative when it comes to recycling plastic. The reality is that there is no known commercial example of an “advanced recycling” facility anywhere in the world that turns plastic waste back into plastic products or packaging.

The most common form of “advanced recycling” uses gasification or pyrolysis technology to turn waste into fuel. This is, in essence, a thermal waste-to-energy proposition that must continue to be regulated in the same way that other waste-to-energy projects are regulated under the EAA. Thermal waste treatments are expensive, energy-intensive and polluting and require robust public oversight, environmental safeguards and community consent.

Other technologies contemplated under the “advanced recycling” banner are experimental and little information is available publicly about the yields from existing operations or the amount and nature of waste by-products. For this reason, a project of any size should be subject to public scrutiny, monitoring and reporting to ensure it is not creating unintended harm to the environment and the health of the surrounding community.

The Notice reflects the goal of reducing waste going to landfill but makes no mention of the need to reduce waste for final disposal. The most likely projects that the proposed changes are intended to



encourage must still be considered final disposal, as noted in the recent decision to reject a gasification and “advanced recycling” project for plastics in Lewisporte, Newfoundland.

Producing fuel from plastic waste does not displace the raw materials needed to make new plastic products or packaging. It is also unlikely to produce a fuel clean enough to displace virgin fossil fuels. Despite fanfare about producing alternative fuels for aviation fuel from waste, only 0.3% of aviation fuels come from alternatives to crude oil.

What’s more, fuels produced from plastic waste contain more toxic substances, including carcinogens, than regular diesel. There is no provision for monitoring emissions from these fuels if they are burned in a different location from where they are produced.

In addition, “The process converting plastic waste to fuel demands considerable energy, which is supplied by burning fossil fuels. Burning the resulting fuel releases additional greenhouse gas emissions. Instead of conserving the material in a circular process, burning plastic-derived fuel adds to the carbon footprint of the plastic lifecycle and stimulates further virgin plastic production to replace the plastic lost as fuel.” In other words, plastic-to-fuel is not a climate solution.

We believe the net effect of streamlining approvals for experimental “advanced recycling” projects will result in at least two harmful outcomes:

1. Increased pollution, including greenhouse gas emissions, from thermal waste treatment.
2. A missed opportunity to focus on reduction and reuse of plastic packaging and products, including through elimination of plastics that are not fit for conventional recycling, by pretending that these can be effectively recycled another way instead.
3. Continued growth of throwaway plastic use and waste.

For these reasons, we urge you not to proceed with the proposed changes to environmental assessments for waste projects.

Answers to the questions posed in the Notice:



- ***Is the proposed approach to EA streamlining reasonable?***

No. “Advanced recycling” is an umbrella term for a set of speculative processes about which there is little data available on things like emissions and yields. In our view, these projects require significant public and environmental oversight. They should not be “streamlined” into existence.

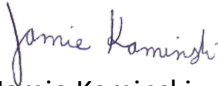
- ***Is an 80% recovery rate based on the ministry’s proposed criteria realistically achievable for companies proposing this technology?***

We have absolutely no way of knowing whether an 80% recovery rate is achievable, and we argue the ministry would also have no way of judging whether a proponent could reach such a recovery rate considering the experimental nature of the broad range of technologies covered by this proposal. ChemTrust and Eunomia have noted that virtually no data is available on yields and emissions from “advanced recycling” projects in operation.

The rate of recovery will also depend on what is measured as input. We would argue that net recovery is the value to be considered. The input would need to include all of the waste delivered for processing, including any materials removed prior to processing that are sent for disposal in landfill or an incinerator, as well as the energy inputs required to run the process. In any case, recovery rates will be impossible to assess until a facility is up and running and receiving and processing waste. We don’t believe there are any yield measures, verified by a third party, that could be used as a proxy recovery rate in applications. Each situation is very different depending on the exact technology to be used and the exact waste input. That means the recovery rates are also likely to vary according to the composition of waste inputs over time.

We believe the ministry cannot possibly base assessment requirements on a recovery rate claimed by a proponent.

We thank you once again for the opportunity to comment on this proposal and ask that you not proceed to streamline the environmental approvals process for experimental and potentially hazardous facilities that are, in any case, not consistent with recycling and the circular economy.


Jamie Kaminski – Director
Zero Waste Canada



Appendix A – Zero Waste Hierarchy 7.1

